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Attention: Kevin Eppers

The May 27, 2014 Inspection of the Kensington Gold Mine

This report covers the May 27, 2014 joint inspection of Kensington Gold Mine. The multidisciplinary inspection team consisted of Brad Orr (District Ranger, Tongass National Forest), David Schmerge (Hydrologist, Tongass Minerals Group), Curtis Caton (Geologist, Tongass Minerals Group) and David Wilfong (Mining Engineer, Alaska Department of Natural Resources (ADNR)). The inspection team was accompanied by Kevin Eppers (Environmental Manager, Kensington Gold Mine) for the entire duration of the trip. The purpose of this inspection was a broad overview of the entire mine. It was Brad's first trip to the mine, and ADNR's first inspection since the snow had melted. Transportation to and from the mine was provided by a United States Forest Service (USFS) chartered Ward Air DeHavilland Beaver floatplane.

Figure 1 Aerial view of the Tailings Treatment Facility.

Before landing in Slate Creek Cove, the floatplane circled over the Tailings Treatment Facility, and then over flew the Comet waste rock pile and Water Treatment Plant (Figures 1 and 2). The mine looked clean and orderly from the air. After circling back to Slate Creek Cove, the team offloaded onto the beach and greeted Kevin Eppers, who was waiting for the plane, and then loaded into a pickup for the short drive to the camp facilities. Because it was the first trip to the mine for one of the team members, a short safety video and orientation was attended and personal protective equipment was obtained.

Figure 2 Aerial view of the Comet waste rock pile and water treatment plant.

The inspectors were driven to the Lower Slate Lake Tailings Treatment Facility (TTF). The access road to the Tailings Facility was in good condition and appeared to have survived well through the milder than normal Alaska winter. The team stopped below the TTF Dam and walked around the area on foot. The localized staining visible on the lower eastern embankment below the dam appears to be worsening with time (Figure 3). The orange staining has been mentioned in previous inspection reports (August 8, 2013[11], October 29, 2013), and is likely being generated due to the graphitic phyllite that was buried below the east end of the dam. The Potentially Acid Generating (PAG) material was buried during the initial construction of the dam after being encountered during the excavation of the dam abutment. The buried material was surrounded by a diorite "shell" containing a high carbonate content. The diorite was intended to neutralize any acid produced by the buried graphitic phyllite, but the orange staining may indicate that some acid rock drainage is seeping from the pile. The buried graphitic phyllite will eventually be excavated and hauled underground when room becomes available.

Figure 3 Orange staining below the Tailings Treatment Facility Dam.

The inspectors drove to the north end of the TTF and visited the barrel test site and the area where PAG graphitic phyllite had been accidentally placed more than a year before. The access road to the barrel test area had been reconstructed due to rising water levels during the spring runoff. The new road follows the same alignment, but fill had been placed at the lowest elevation to ensure that the road was not inundated by the rising waters (Figure 4).

[1]The August 8, 2013 report covered three different visits to the mine; 6/25/13, 7/16/13, and 7/29/13.

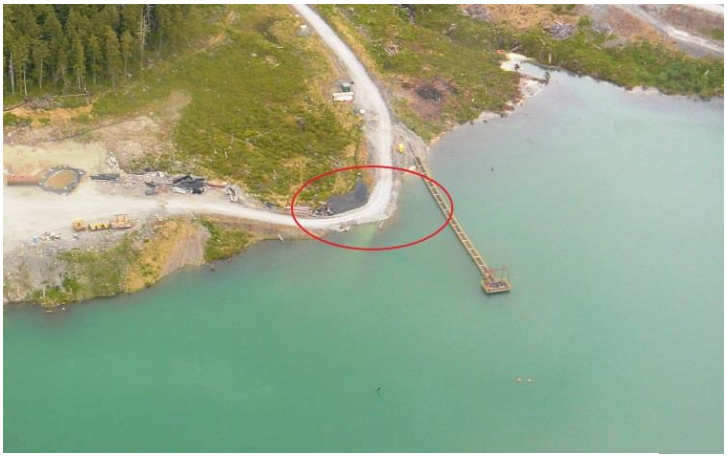

Figure 4 Filled road bed area.

As with the previous year, after the snow melted, water seeping from the toe of the pile had been found to have poor quality. A small amount of additional material had been excavated over the previous two days and placed into a temporary holding cell lined with HDPE. The holding cell is used as a staging area for the material until it is transferred into an underground haul truck and taken below ground to the cement rock fill plant. It is then mixed with cement and development rock, and disposed of permanently in an open stope, where it serves as support to the underground mine. The collection sump near the toe of the pile was moved further north because the original sump was flooded as the elevation of the water in the TTF rose during the spring breakup. The relocated sump still gathers all of the effluent from the pile and serves as the water quality testing point. The water collected in the sump is pumped temporarily into a lined holding pond and eventually trucked to the small water treatment plant at the south end of the TTF where it is treated and discharged into an infiltration gallery.

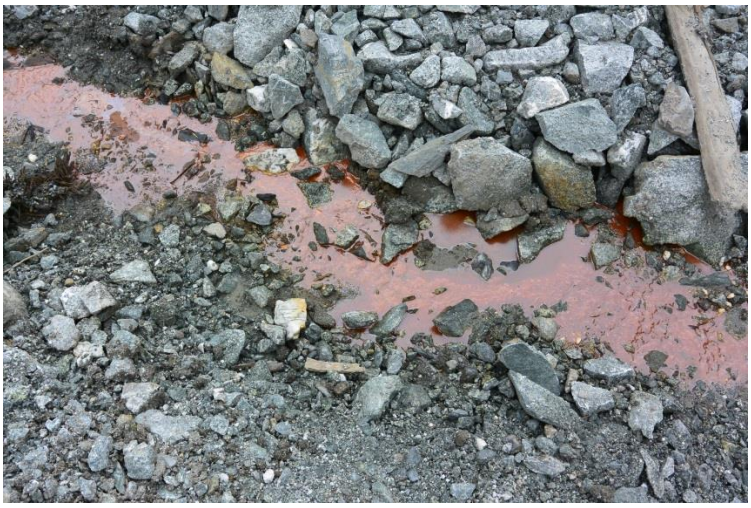

Figure 5 The discoloration in this seep appeared to be the result of organic decomposition and digestion by iron bacteria.

A closer look at the toe of the pile revealed that orange staining could be found in several areas. However, it is believed that much of the staining may not have been as a result of Acid Rock Drainage (ARD). Upon closer inspection, the far south seep revealed a floating scum and rainbow sheen indicative of iron bacteria (Figure 5). The majority of the discoloration is likely due to the natural function of anoxic iron bacteria breaking down organic material in the original topsoil stockpile that was placed in the area during the original construction of the TTF dam. Field tests show a near neutral pH and low conductivity from the south seep. However, the middle seep continues to show that some parameters do not meet permit requirements[2], hence the small additional amount of excavated material.

The team moved to the site of the graphitic phyllite long-term barrel tests. The barrel tests were constructed during the summer of 2013 to provide more insight about the long term reactivity of the graphitic phyllite. The effluent from the barrel tests had recently been collected for laboratory

[2] Laboratory tests conducted on water collected 5/22/2014.

testing after being frozen and covered by snow for the past several months. The barrels and collectors appeared to have survived the winter without damage and no issues were observed.

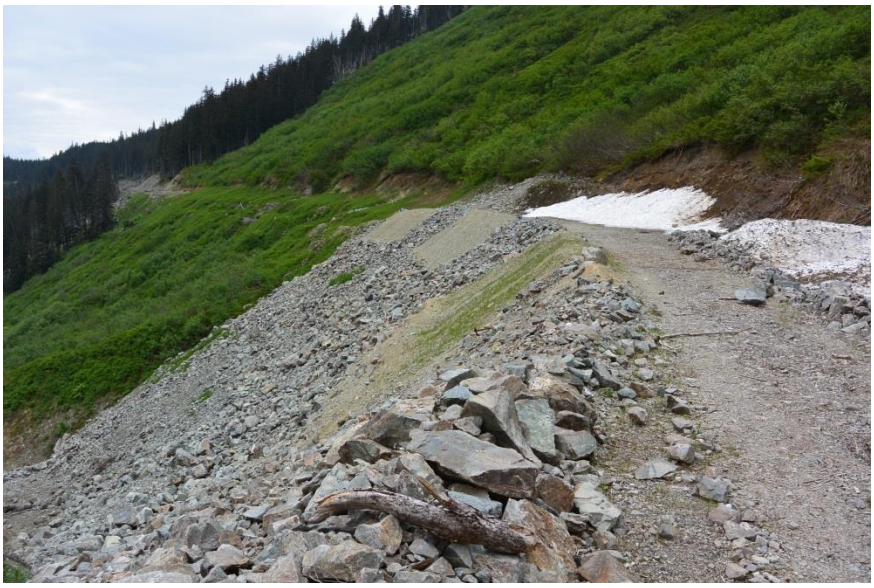

Figure 6 Revegetation Test Plots

The inspectors moved on to the Tailings Treatment Facility Water Treatment Plant. Brad, Curtis, and Kevin toured the inside of the plant, while David and I inspected the outside. The water treatment plant area was clean and tidy however, David observed at least one container that may have been outside of secondary containment.

The team then moved on to the Revegetation Test Plots located along the Pipeline Road (Figure 6). The test plots survived the spring breakup well. No major rills, gullies, or other serious erosion features were observed. The lush grass that had been emerging at the end of the 2013 growing season had disappeared, however new growth was observed in the plot that contained fertilizer and mulch (closest plot in Figure 6). The other two plots, one containing a biopolymer and the other with no soil amendment, contained very little new plant growth, but it was still early in the growing season.

After lunch, the inspectors donned the extra safety gear required for traveling underground and drove through the main tunnel to the Comet Wasterock Pile. It appeared that no Wasterock had been placed on the Comet Pile recently. When asked why, Kevin stated that the Wasterock was being disposed of on the Jualin side so it could be staged for Stage III construction of the TTF Dam. The double berms along the west side of the pile's top, designed to deter dumping wasterock over the side, remained intact and no new rock had

Figure 7 The silt fence running between the Comet Wasterock Pile and Ophir Creek was partially buried.

rolled into the now flowing Ophir Creek. However, the silt fence at the bottom of the pile, designed to reduce the sediment flowing into Ophir Creek was in disrepair (Figure 7). The top of the pile was being used to store mine equipment, and was clean and tidy.

After leaving the pile, the inspectors moved to the Comet Water Treatment Plant. The flow of mine water to the plant was high (~2300 gpm) due to the recent spring breakup. The water was being pumped into both Pond One and Pond Two, and was quite silty despite the use of the sumps in the mine, likely due to the high rate of flow. After a quick walk around the outside of the treatment plant, the inspectors moved to the Comet Beach area. Near Comet Beach, Canada Thistle plants were discovered (Figure 8). The area was known to contain the invasive weed in the past. The Kensington Mine is attempting to eradicate the invasive plant, and is evaluating options to do so.

Figure 8 Canada Thistle.

The team moved on to look at a dilapidated shack left over from previous mining and exploration activities. There have been discussions in the past about removing the shack due to safety concerns, but no decisions have been made as yet. After leaving the Comet Beach, the team traveled back underground to take a quick tour of the Underground Paste Plant. The paste plant was operating, and we observed a Coeur employee performing a slump test on the paste. After leaving the paste plant we traveled toward the Jualin Portal, but ran up against a broken down haul truck. The disabled 30 ton haul truck caused a significant delay in our egress from the mine. By the time the truck had been repaired, it was apparent that we would not make our scheduled floatplane ride home. Fortunately, a new flight was scheduled at a later time, and we departed from the mine approximately 1 hour behind schedule for the 30 minute flight back to Juneau International Airport.

The Alaska Department of Natural Resources would like to thank the United States Forest Service for providing float plane transportation to and from the Kensington Mine, and Kevin Eppers and Coeur Alaska for providing a safe and informative inspection.